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WIEVLE Development and Testing of a Spherical UUV Platform

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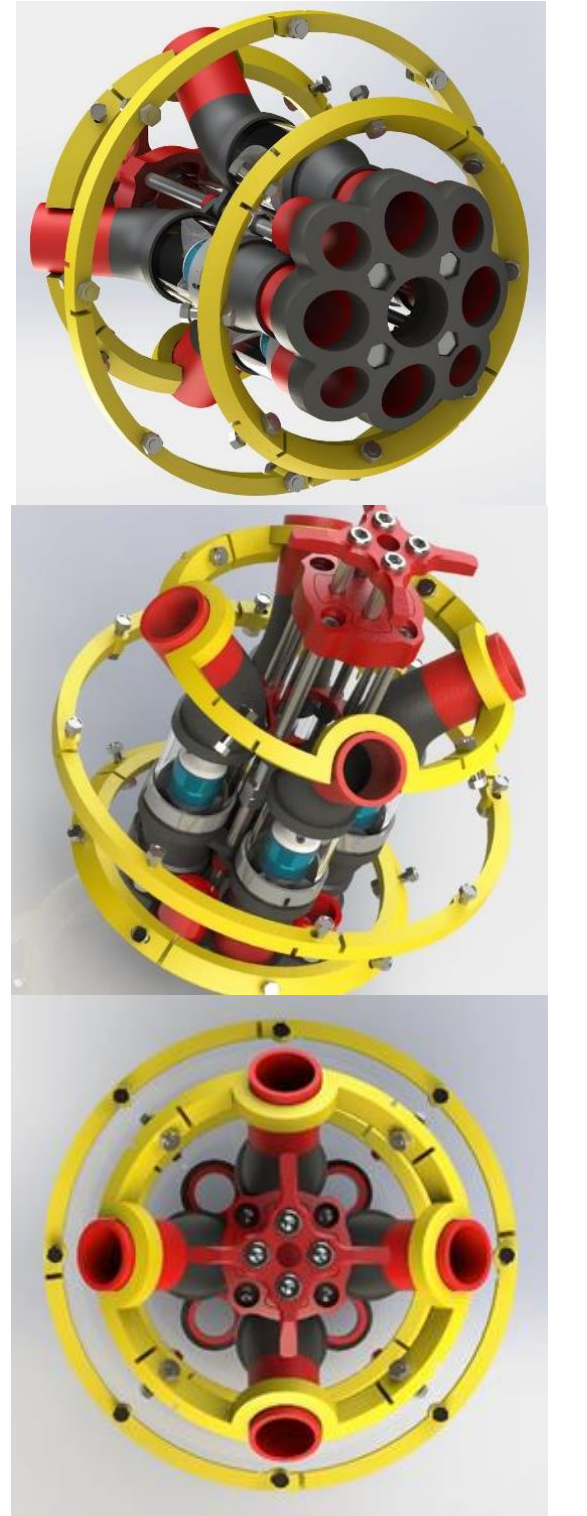
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WIEVLE – Development and Testing of a Spherical UUV Platform for Littoral and Confined-Space Operations



How

- Iterative development and testing of novel, spherical hull UUV:
 - Flight computer programming for propulsion / navigation control of the unique, quad-core, vectored-thrust propulsion subsystem (shown on right)
 - Integration with depth sensors, IMU and power supplies
 - Sensor integration within the modular, spherical hull plates; embedding optical cameras and an LED array
 - “Sphere of Eyes” concept for GoPro integration
 - Subsystem integration, waterproofing, ballasting and strain-gage testing, enabling small-scale tank testing
- Littoral / Confined space test environment development:
 - Test the ability to maneuver / loiter in hostile environments

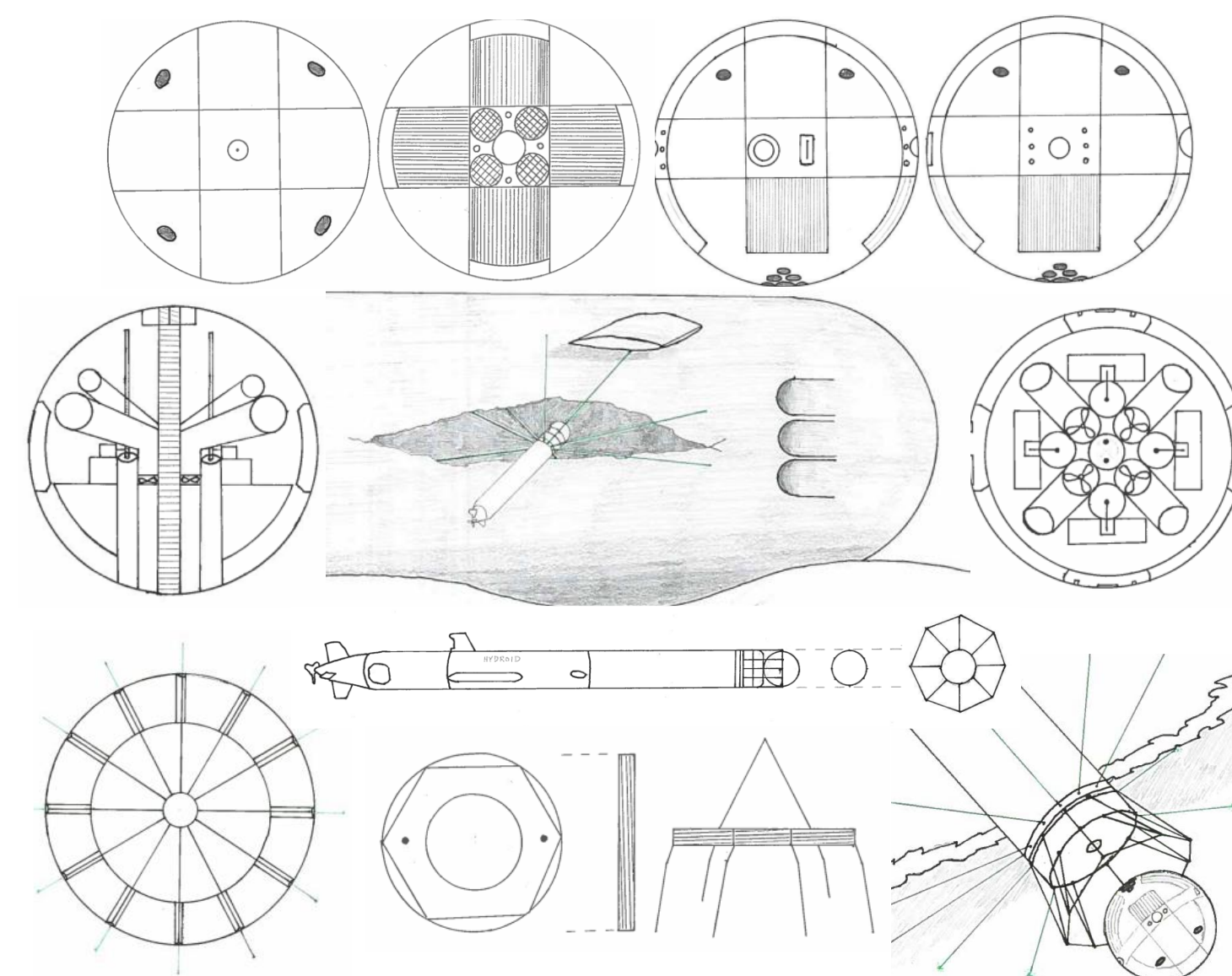


Project Goals / Deliverables

- The project will enable the development of the existing, but non-functional, prototype into a fully-functional UUV for future mission development
- Maritime Science or USW journal article submission
- Present at an appropriate conference
- Resident student thesis (SE580)
- SE class project and capstone support



Internal components



Vision

- UUV platform prototype development for **cross-domain** operations from **extreme environments** such as:
 - Contested, entanglement and obstacle-laden near-shore littorals
 - Confined, enclosed underwater compartments
 - ***WIEVLE's architecture was specifically designed for this!***
- Enable the transition from a tether-less UUV this year, to an AUV next year!
- The unique architecture may provide the warfighter a configurable platform for **cross-domain**, **multi-mission** capability including:
 - NC3 communications relay – from under, on or above the surface
 - ISR from previously impenetrable environments such as shipwrecks
 - Disruptive, emergent weaponization (**MO**bile **R**obotic **A**mphibious **E**xplosive)